

### Abstract of the Disclosure

The present invention relates to a method for fabricating a semiconductor device with improved refresh  
5 time. The method includes the steps of: forming a plurality of gate lines on a substrate; forming a plurality of cell junctions by ion-implanting a first dopant with use of the gate lines as a mask; forming a buffer layer along a gate line profile; and forming a plurality of plug ion-  
10 implantation regions in the cell junctions by ion-implanting a second dopant into the substrate under the presence of the buffer layer to thereby form the plugs thereon.